

WE CLAIM:

1. A hyaluronic acid isolate comprising hyaluronic acid derived from eggshell membrane.
- 5 2. A hyaluronic acid isolate according to Claim 1, wherein said eggshell membrane contains at least about 0.5 wt% hyaluronic acid.
3. A hyaluronic acid isolate according to Claim 2, wherein said eggshell membrane contains at least about 1 wt% hyaluronic acid.
- 10 4. A hyaluronic acid isolate according to Claim 3, wherein said eggshell membrane contains hyaluronic acid in the range of about 1 to about 5 wt%.
5. A hyaluronic acid isolate according to Claim 1, wherein said hyaluronic acid
15 isolate contains at least about 80 wt% hyaluronic acid.
6. A hyaluronic acid isolate according to Claim 5, wherein said hyaluronic acid isolate contains at least about 90 wt% hyaluronic acid.
- 20 7. A hyaluronic acid isolate according to Claim 6, wherein said hyaluronic acid isolate contains at least about 95 wt% hyaluronic acid.

8. A hyaluronic acid isolate according to Claim 1, wherein said hyaluronic acid isolate is derived from said eggshell membrane by extracting a hyaluronic acid fraction from said eggshell membrane.
- 5 9. A hyaluronic acid isolate according to Claim 8, wherein said hyaluronic acid fraction is purified to provide said hyaluronic acid isolate.
10. A hyaluronic acid isolate according to Claim 9, wherein said hyaluronic acid isolate is cosmetic grade hyaluronic acid.
- 10 11. A hyaluronic acid isolate according to Claim 9, wherein said hyaluronic acid isolate is pharmaceutical grade hyaluronic acid.
12. A hyaluronic acid isolate according to Claim 1, further comprising a naturally
15 occurring material derived from eggshell membrane selected from the group consisting of a hexosamine, chondroitin sulfate and combinations thereof.
13. A hyaluronic acid isolate according to Claim 12, wherein said hexosamine is selected from the group consisting of N-acetyl-D-glucosamine, N-acetyl-D-
20 galactosamine, a hexose and mixtures thereof.
14. A hyaluronic acid isolate according to Claim 12, wherein said hexosamine is present in an amount of at least about 0.05 wt%.

15. A hyaluronic acid isolate according to Claim 14, wherein said hexosamine is present in the range of about 0.5 to about 10 wt %.
16. A hyaluronic acid isolate according to Claim 15, wherein said hexosamine is present in the range of about 0.5 to about 5 wt %.
17. A hyaluronic acid isolate according to Claim 12, wherein said chondroitin sulfate is present in an amount of at least about 0.05 wt %.
18. A hyaluronic acid isolate according to Claim 17, wherein said chondroitin sulfate is present in the range of about 0.5 to about 10 wt %.
19. A hyaluronic acid isolate according to Claim 18, wherein said chondroitin sulfate is present in an amount of about 0.5 to about 5 wt %.
20. A method for producing a hyaluronic acid composition comprising extracting a hyaluronic acid composition from eggshell membrane.
21. A method according to Claim 20, wherein said eggshell membrane contains at least about 0.5 wt % hyaluronic acid.
22. A method according to Claim 21, wherein said eggshell membrane contains at least about 1 wt% hyaluronic acid.

23. A method according to Claim 22, wherein said eggshell membrane contains hyaluronic acid in the range of about 1 to about 5 wt%.
24. A method according to Claim 20, further comprising separating said eggshell
5 membrane from the egg yolk, egg white and eggshell prior to the extracting step.
25. A method according to Claim 20, wherein said hyaluronic acid composition contains at least about 80 wt% hyaluronic acid.
- 10 26. A method according to Claim 25, wherein said hyaluronic acid composition contains at least about 90 wt% hyaluronic acid.
27. A method according to Claim 26, wherein said hyaluronic acid composition contains at least about 95 wt% hyaluronic acid.
- 15 28. A method according to Claim 27, wherein said hyaluronic acid composition is substantially pure hyaluronic acid.
29. A method according to Claim 20, wherein said hyaluronic acid composition
20 contains hyaluronic acid having an average molecular weight of less than about 1,000,000 daltons.

30. A method according to Claim 29, wherein said hyaluronic acid composition contains hyaluronic acid having an average molecular weight in the range of from about 50,000 to about 500,000 daltons.
- 5 31. A method according to Claim 30, wherein said hyaluronic acid has an average molecular weight in the range from about 50,000 to about 250,000 daltons.
32. A method according to Claim 29, further comprising modifying the average molecular weight of said hyaluronic acid.
- 10 33. A method according to Claim 32, wherein the molecular weight of said hyaluronic acid is modified by increasing the average molecular weight.
34. A method according to Claim 33, wherein the average molecular weight of
15 said hyaluronic acid is increased by cross-linking the hyaluronic acid.
35. A method according to Claim 20, wherein said hyaluronic acid composition comprises hyaluronic acid and at least one other naturally occurring material derived from eggshell membrane selected from the group consisting of a hexosamine,
20 chondroitin sulfate and combinations thereof.
36. A method according to Claim 35, wherein said hexosamine is selected from the group consisting of N-acetyl-D-glucosamine, N-acetyl-D-galactosamine, a hexose and mixtures thereof.

37. A method according to Claim 35, wherein said hexosamine is present in an amount of at least about 0.05 wt%.
38. A method according to Claim 37, wherein said hexosamine is present in the
5 range of about 0.5 to about 10 wt %.
39. A method according to Claim 38, wherein said hexosamine is present in the range of about 0.5 to about 5 wt %.
- 10 40. A method according to Claim 35, wherein said chondroitin sulfate is present in an amount of at least about 0.05 wt%.
41. A method according to Claim 40, wherein said chondroitin sulfate is present in the range of about 0.5 to about 10 wt %.
- 15 42. A method according to Claim 41, wherein said chondroitin sulfate is present in an amount of at least about 0.5 to about 5 wt %.
43. A composition for use with mammals comprising a hyaluronic acid
20 component derived from eggshell membrane.
44. A composition according to Claim 43, wherein said eggshell membrane contains at least about 0.5 wt% hyaluronic acid.

45. A composition according to Claim 44, wherein said eggshell membrane contains at least about 1 wt% hyaluronic acid.
46. A composition according to Claim 45, wherein said eggshell membrane contains hyaluronic acid in the range of about 1 to about 5 wt%.
47. A composition according to Claim 43, wherein said hyaluronic acid component contains at least about 80 wt% hyaluronic acid.
48. A composition according to Claim 47, wherein said hyaluronic acid component contains at least about 90 wt% hyaluronic acid.
49. A composition according to Claim 48, wherein said hyaluronic acid component contains at least about 95 wt% hyaluronic acid.
50. A composition according to Claim 43, wherein said hyaluronic acid component comprises hyaluronic acid and at least one other naturally occurring constituent derived from said eggshell membrane selected from the group consisting of a hexosamine, chondroitin sulfate and combinations thereof.
51. A composition according to Claim 43, wherein said composition is selected from the group consisting of a lubricant or moisturizing agent in cosmetics or eye drops, an orally administered nutraceutical and a locally administered composition for treating osteoarthritis.

52. A method for treating a mammal having a condition that will benefit from the administration of hyaluronic acid, said method comprising administering to said mammal a composition comprising hyaluronic acid derived from eggshell membrane.

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53. A method according to Claim 52, wherein said eggshell membrane contains at least about 0.5 wt% hyaluronic acid.

54. A method according to Claim 53, wherein said eggshell membrane contains at least about 1 wt% hyaluronic acid.

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55. A method according to Claim 54, wherein said eggshell membrane contains hyaluronic acid in the range of about 1 to about 5 wt%.

56. A method according to Claim 52, wherein said composition contains at least about 80 wt% hyaluronic acid.

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57. A method according to Claim 56, wherein said composition contains at least about 90 wt% hyaluronic acid.

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58. A method according to Claim 57, wherein said composition contains at least about 95 wt% hyaluronic acid.

59. A composition according to Claim 52, wherein said composition further comprises at least one other naturally occurring constituent derived from said eggshell membrane selected from the group consisting of a hexosamine, chondroitin sulfate and combinations thereof.

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60. A composition according to Claim 52, wherein said composition is selected from the group consisting of a lubricant or moisturizing agent in cosmetics or eye drops, an orally administered nutraceutical and a locally administered composition for treatment of osteoarthritis.

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61. A method for producing a product for use with mammals, said method comprising extracting a hyaluronic acid composition from eggshell membrane and incorporating said hyaluronic acid composition in said product for use with mammals.

15 62. A method according to Claim 61, further comprising purifying said hyaluronic acid composition prior to the step of incorporating said composition in said product.

63. A method according to Claim 61, wherein said hyaluronic acid composition comprises hyaluronic acid and at least one other naturally occurring constituent
20 derived from said eggshell membrane selected from the group consisting of a hexosamine, chondroitin sulfate and combinations thereof.

64. A method according to Claim 61, wherein said product is selected from the group consisting of a lubricant or moisturizing agent in cosmetics or eye drops, an

orally administered nutraceutical and a locally administered composition for treatment of osteoarthritis.